TABLE 6 – DELIVERY TRUCKS: MAIL (CNG, E85)

U.S. Postal Service Alternative Fuel Vehicle Program

The U.S. Postal Service has a fleet of over 200,000 vehicles, which annually travel 1.1 billion miles and consume 110 million gallons of fuel. We deliver 180 billion pieces of mail annually, which is 41% of the world's mail volume. The Postal Service delivers to 128 million households and businesses, and employs 800,000 employees that work at 40,000 postal facilities.

A Leader in Alternative Fuels

The USPS is always looking for new ways to improve service by reducing costs, increasing efficiency, and implementing environmentally and socially responsible policies and technologies. In 1899, the Postal Service experimented with its first alternative fuel (electric) vehicle. Over the past 100 years, the Postal Service has developed a long history of deploying vehicles that run on fuels other than gasoline. This commitment has led to the largest and most diverse fleet of alternative fuel vehicles in the United States. By the end of 2000 the AFV fleet will grow to include over 19,000 vehicles. With the Postal Service's continuing need to replace aging delivery vehicles operating in every community throughout the U.S., we are uniquely positioned to demonstrate alternative fuels and new technologies.

As a quasi-governmental agency, the Postal Service must comply with the Energy Policy Act of 1992 and the Clean Air Act of 1990, which require that certain percentages of new vehicle acquisitions by federal fleets be clean emitting or alternatively fueled. These laws are based on principles that the Postal Service fully supports, such as improving air quality and reducing dependence on imported oil. The Postal Service has exceeded EPACT AFV purchase requirements each year. The Postal Service has taken advantage of the opportunity to play a leadership role in alternative fuel use and to set an example of environmental responsibility.

CNG Program

Between 1991 and 1996, the Postal Service, initiated a large alternative fuel program by adding CNG conversion kits to existing delivery vehicles, the Grumman Long-Life Vehicles (LLVs). Over 7,300 LLVs were converted to operate on either CNG or gasoline. Conversions included tanks with 4 or 6 gasoline gallon equivalent (gge) capacity. This provides an adequate range for the delivery vehicles The cost of converting each vehicle was about $2,700, including conversion kit, tank, and the four hours of labor needed for installation, which made this choice more cost-effective than designing and manufacturing new OEM right-hand-drive CNG vehicles. In addition to the conversion of LLVs, a relatively small number of dedicated CNG and OEM bi-fuel vehicles (mail-hauling and non-mail-hauling) have been purchased.

Challenges to the program have included: 1) Availability of supporting infrastructure; 2) Departure from a uniform fleet to the management challenges of a diverse fleet; 3) Conflicting or lacking information on true costs and tradeoffs of fuel and technology options; and 4) Alternative Fuel Vehicles are not readily available that meet the law and unique USPS requirements. The USPS wants to be a leader in producing data that will help clear the confusion. The Postal Service CNG fleet has demonstrated significant reductions in polluting emissions.

CNG Refueling Infrastructure

About 30 percent of the CNG fleet refuels on-site. The remaining vehicles were assigned to locations where it was expected that there would be refueling capability nearby. In some cases, the refueling infrastructure has not materialized. Where it is has been determined that CNG is not going to be available in the foreseeable future, CNG vehicles are being reassigned to postal facilities that have better access to CNG.

Lessons Learned

The U.S. Postal Service has learned many valuable lessons in establishing its CNG program, much of which can be applied to other AFV programs:

- Successful programs require concentrated deployment of vehicles such that economies can be achieved.
- Vehicles and conversion kits should be purchased from established, reliable companies, since they can be expected to stay in business and honor warranties and supply spare parts for many years.
- Value of technical and economic quantitative measurement--results will aid planning and decision-making, as well as benefit industry, other fleets, and general public.
- Successfully introducing new technology requires working closely with federal, state, local agencies, other organizations, and industry.
- AFV programs require 'system' thinking. It is not just a vehicle purchase.
- Public/private partnerships can be an important component of success.
- The purchase of dedicated (rather than bi-fuel) vehicles guarantees usage of the cleaner fuel, but the vehicles must be assigned to locations where the supply of fuel is well assured.
- Adequate supplies of spare parts should be required in the original vehicle purchase contract, so that they can be quickly accessed for repairs.
- Ensure that management places proper emphasis on the program, so that there is support at all organizational levels.
- Drivers and managers should receive information and training on the benefits of using alternative fuels.

Ethanol Flex-Fuel Vehicle (FFV) Program

To meet the AFV acquisition goals in 1999, the Postal Service is purchasing 10,000 flex-fuel delivery vehicles, which can run on ethanol or gasoline. Ford Motor Company is supplying these vehicles at about the same price of a comparable gasoline vehicle. Working with a major auto manufacturer precludes the kinds of problems with spare parts that were encountered with the CNG conversion program. Since, like CNG, ethanol is not yet in common usage, it will take time to build the refueling infrastructure. Negotiations are taking place with the ethanol industry to have E-85 refueling pumps available at fueling stations near postal facilities. Tremendous success has already been achieved toward this end—six months in advance of the delivery of the FFVs. For example, we are currently negotiating a contract for mobile fueling of the Southeast Area's entire FFV fleet (over 1,300 vehicles). Since a large number of FFVs already are being driven by the general public and other fleets, the Postal Service is confident that the demand will attract ethanol refueling infrastructure throughout the country. While the cost of ethanol fuel is generally higher than gasoline or CNG, it is the only additional cost associated with this fuel technology, whereas other options require expensive infrastructure, training programs, and parts inventory.

Preparing for the Future

The Postal Service is currently soliciting proposals for an electric vehicle fleet. Current AFV testing programs include propane for delivery vehicles, liquefied natural gas for heavy duty vehicles, a new generation CNG conversion kit certified to meet the Clean Air Act's 'low emission vehicle' standards, and possibly a fuel cell vehicle in the near future. Education and outreach on AFV and clean air issues to our employees and the communities we serve will continue to be a priority for the Postal Service. The Postal Service is committed to delivering cleaner air along with continued excellent service into the next millenium.